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ABSTRACT

The peer mentor program at the two-year campus of New Mexico State University at Alamogordo utilizes a stress prevention model of social support. In an effort to determine the most successful program design, two social support models were introduced into the program. In the first, 14 participants received individual, one-on-one support from a mentor, while in the second, 12 students received support in small groups from a single mentor. A control group of 15 students received no support. In both support conditions, students met with the mentor for 1 hour each week to discuss the campus and student-related issues, or to study. All study participants were new to the college. The two different support conditions were compared to assess effects on mentees' grades, retention, identification with the role of student, and psychological well-being. In addition, the effects of mentor-mentee similarity, and the performance and psychological well-being of the mentors were examined. Pre- and post-intervention questionnaires were used to assess psychological outcomes. Study results included the following: (1) the mentored students had higher grade point averages (GPAs) than the students who had no mentors, regardless of whether the mentoring took place in group or one-on-one settings; (2) students who had been mentored in groups returned the following semester at a higher rate than students with individual mentors or students in the control group; (3) there was virtually no change in commitment to the student role in any of the groups; (4) similarities in the attitudes and activities of the mentors and mentees had no effect on GPA or retention; and (5) a detrimental relationship was found between mentor-mentee similarity and the GPA of the mentor. (PAA)

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ACADEMIC PERFORMANCE AND RETENTION IN A PEER MENTOR PROGRAM AT A TWO-YEAR CAMPUS OF A FOUR YEAR INSTITUTION

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ABSTRACT

Two preventive social support interventions were tested in a peer mentor program at a two year college to assess effects on mentees' grades, retention, change in student identity, and change in psychological well-being. Also examined were (1) effects of mentor-mentee similarity and (2) effects on the performance and psychological well-being of the social support providers. Participants in one experimental condition received individual support from a mentor, and participants in the second condition received support in small groups from a single mentor. Both experimental conditions and the control group received weekly campus information to control for an information confound. Results indicate that retention is significantly greater for the group condition, and there is a trend toward higher grades for the combined experimental conditions. Identification with the student role and psychological well-being do not change for any groups. Mentor-mentee similarity does not affect grades or retention. Peer mentors experience a decrease in grades with increased mentor-mentee similarity. Peer mentors also experience an increase in quality of life as a function of effort put into the program. Findings suggest that retention is best for participants in the cost-effective group condition of preventive social support.

INTRODUCTION

The concern of this study was the evaluation of a peer mentor program based on the stress prevention model of social support. The program was in an applied setting and was designed for college students who were either new or returning to college after several semesters out of school. The goal of the program was to enhance academic performance, retention, and identification with the student role. A primary assessment within groups was the measurement of the effects of the similarity of the peer mentor and the mentee on the dependent measures. A secondary focus of the research was an examination of the effects on the peer mentors as social support providers.

Theoretical Rationale

The primary theoretical basis for the program to be studied was provided by the stress prevention model of social support (Barrera, 1988; Gottlieb, 1983). Other theories which played an important role in the theoretical development of the research were: social comparison theory (Festinger, 1954; Goethals, 1986), reinforcement/affect theory (Byrne & Clore, 1970; Byrne, Clore & Smeaton 1986; Jamison, Lydon, & Zanna, 1987) and identity theory (Stryker, 1968; Stryker & Serpe, 1982).

The stress prevention model of social support suggests that when specific social support is an antecedent to stress, that support can actually prevent the occurrence of stress and can influence the cognitive perception regarding the degree of threat from a stressor (Barrera, 1988; Dignam, Barrera, & West, 1986; Gottlieb, 1983). In the program studied, the peer mentor provided social support to the new student in the college setting

from the beginning of the semester. Therefore, the social support preceded college-related stressors. The notion of social support from a peer was couched in social learning theory (Bandura, 1965; 1986) which suggests that role behavior is learned through observation and modeling. The vicarious success experienced when others, particularly similar others, succeed "provides incentives for individuals to undertake difficult tasks. Moreover, showing that success is possible through perseverance helps to sustain effort in the face of setbacks" (Bandura, 1986, p. 302).

Both social comparison theory and reinforcement/affect theory provided a theoretical basis for the similarity variable in this research. Social comparison theory examines the process of seeking out other people who are like us to help us evaluate ourselves. In this process, according to Suls (1986), individuals make causal attributions regarding beliefs or abilities on a given task. That is, people seek to know what they believe and how well they perform compared to similar others, and people seek to infer cause as to why they believe or act in a certain manner. In the peer mentor program studied, new students worked with peer mentors who were successful in the role of student; the peer mentors provided a reference for beliefs and performance for the new student. The peer mentors were encouraged to share with their mentees when they had similar problems (such as low GPA and transition stresses), and it was suggested that mentors inform mentees if those problems had

improved after their first semester. The mentees' attitude and activity preferences were measured at the beginning of the study. At the end of the study, the mentees' perceived degree of comparison was measured. The effects of attitude/activity preferences and perceived comparison to mentor were examined with regard to behavior (GPA and retention) of the mentee and identification with student role.

Reinforcement/affect theory suggests that we like people and situations which provide reinforcement for us. Attraction to similar others is a function of the reinforcement felt when common attitudes or activity preferences are shared (Jamison, et al., 1987). Similarity between peer mentors and subjects was examined for its effect on the dependent measures with the expectation being that the more similar the match the greater the GPA and the higher the retention rate of the mentees. This could be explained by the positive association of college with the peer mentor which this theory predicts when similarity is present. Measurement was also made of the mentees' perception of similarity, and the correlation it had to performance and retention.

Identity theory addresses the commitment to and salience of the various identities one has (Stryker, 1968). The more committed the individual is to a role, the more salient that role is for him or her. A goal of the peer mentor program was to increase the salience of the student role for the new students. Students (mentees) in the two treatment conditions spent

scheduled time in the student role with a peer mentor in an attempt to increase commitment and to increase salience.

Evaluation of Peer Mentor Program

The effectiveness of the peer mentor program was tested by examining two variations of the program. In the first condition there were peer mentor/mentee pairs, with each pair spending time together. In the second condition, mentees met in small groups and shared a peer mentor. Students in the control condition did not spend any time with a mentor. Both of the treatment conditions were an application of identity theory's contention that commitment increases as time in role increases, and salience increases as commitment increases (Wells & Stryker, 1988). What was tested was whether time in role in a one-on-one relationship with a role model (condition I) produced a stronger commitment than time in role in a group relationship with a role model (condition II).

Differences in performance, retention, and change in student identity from the beginning to the end of the semester were examined for both conditions and the control group. Several covariates, such as similarity of the peer mentors to the subjects and perceived social support, were also analyzed.

The cost effectiveness of implementing a peer mentor program was examined by analysis of these alternative peer mentor programs. The primary cost to be weighed was manpower; the group mentoring condition would be more cost effective in that regard.

Examination of Effects on Peer Mentors

The effects on the provider of social support are often overlooked (Shumaker & Brownell, 1984). This study addressed that concern by assessing the change in the peer mentor's psychological well-being from the beginning to the end of the semester. Areas to be measured included change in affect, change in quality of life, and change in global social support. GPA by condition was also measured to evaluate the performance of the providers.

METHODS

This study examined the following: a) the between-group differences for the two experimental conditions of peer mentoring and the control group on the criterion variables--change in commitment, change in identity salience, GPA, and retention, b) the effects of mentor-mentee similarity and social comparison within the experimental conditions on the criterion variables, and c) the effects by condition on the GPA and change in psychological well-being of the peer mentees.

Experimental Conditions and Control Group

The rationale for the establishment of both of the experimental conditions was drawn from identity theory (Stryker, 1968; 1980; 1983; 1987; McCall & Simmons, 1978), which suggests that time in role increases commitment to the role, and increased commitment increases identity salience; further, increased identity salience increases role performance.

Predictions related to the differences between the two experimental conditions were drawn from social support theory. The perception that one is cared for positively influences the cognitive appraisal of stressful events (Shumaker & Brownell, 1984). One way to cultivate a mentee's perception of being cared for was to have the peer mentor perform socially supportive behaviors for that mentee. It was hypothesized that peer mentors in condition I (the peer mentor/mentee pair condition) would be able to provide more preventive social support than peer mentors in condition II (the group condition). If, in fact, the mentees in condition I perceived that they were receiving more socially supportive behaviors from their peer mentors, they should have performed at a higher level. This research tested that contention. Also, this research tested if role identity (measured through commitment and salience) increased in this process.

Based on the differences in the three conditions, it was predicted that the increase in mentee commitment to student role and salience of the student role would be greater for mentees in condition I than for mentees in condition II. Also, it was predicted that increase in mentee commitment to student role would be less for subjects in the control group than for mentees in condition I and condition II.

Regarding GPA it was predicted that the end of the semester GPA of mentees in condition I would be higher than the GPA of mentees in condition II and that the end of the semester GPA of

subjects in the control group would be lower than the GPA of mentees in condition I and condition II.

Further, it was predicted that the retention of mentees in condition I would be higher in the semester following the intervention than the retention of mentees in condition II, and the retention of subjects in the control group would be lower in the semester following the intervention than the retention of mentees in condition I and condition II.

Similarity and Social Comparison

The predictions related to similarity of the mentee to the peer mentor were derived from social comparison theory (Festinger, 1954; Goethals 1986; Goethals & Darley, 1977) and reinforcement/affect theory (Clore & Byrne, 1974; Byrne, Clore & Smeaton, 1986; Jamison, Lydon, & Zanna, 1987). Social comparison theory suggests that we compare ourselves to people like us and aspire to attain what they have attained. Reinforcement/affect theory suggests that one's attraction to a situation is related to one's attraction to people associated with that situation.

Based on these two theories, it was predicted that the greater the similarity and/or social comparison of the mentee to the peer mentor in either condition I or II, the greater the increase in the commitment of the mentee to the student role and the greater the increase in salience of student role.

Also, it was predicted that the greater the similarity and/or social comparison of the mentee to the peer mentor in either condition I or condition II, the greater the mentee's GPA

for the semester of the intervention.

In addition, it was predicted that the greater the similarity and/or social comparison of the mentee to the peer mentor in either condition I or II, the greater the retention of mentee in the semester following the intervention.

Effects of Peer Mentors

No predictions were made regarding the effects of being a peer mentor on GPA and change is psychological well-being. This secondary focus of the research was exploratory in nature.

Participants

Participants in this study were 41 students who were new to New Mexico State University at Alamogordo or who had been out of school for several semesters. Participants were recruited during new student orientation, during registration, and during the first days of class from introductory psychology and sociology classes. At the beginning of the semester, there were 16 students in the individual condition, 15 students in the group condition, and 15 students in the control condition.

At the end of the semester, there were 14 students in the individual condition, 12 students in the group condition, and 15 students in the control condition. A comparison of GPA's for those who left the program with GPA's for those who remained on the program showed that those who left the individual condition had lower GPA's than the mean for both mentee groups, but higher GPA's than the mean for the control group. The GPA of the student who left the group condition but remained in school was

lower than the mean of any group.

Retention for those who left the program was 50% for the individual condition and 33% for the group condition. Retention for program participants in all groups was higher than for those who left.

The peer mentors in this research were 20 students at New Mexico State University at Alamogordo who had completed a minimum of 12 credit hours at the institution and who had earned a minimum of a 3.0 GPA on a 4.0 system. Fourteen of the peer mentors were in the individual condition--one mentee per peer mentor, and six of the peer mentors were in the group condition--two or three mentees per peer mentor.

Procedure

At the beginning of the semester, those students who volunteered to participate in the peer mentor program were each assigned to one of the two experimental conditions or to the control group. Within each experimental condition, students were matched by sex and by age. The age matching was by two broad categories--over 25 years or under 25 years.

During the first week of the study, all participants and peer mentors signed a permission form to permit access to academic records by the investigator.

Conditions

In the first condition, the peer mentor-mentee pair condition, the subject met with the peer mentor for one hour per week to obtain information about the campus, to study, or to discuss student-related issues. To avoid peer mentor burnout and to avoid an over reliance by the mentee on the peer mentor, peer

mentors were encouraged to keep contact to the one hour minimum limit without appearing to reject the mentee. Peer mentors kept a weekly record of contact time and the nature of the contact. Each week the peer mentor was responsible for providing specific information to his or her mentee. The peer mentor received that information in the required training class. The information was related to campus services; for example, one week the study skills center was discussed in the training session. The peer mentor was expected to give the mentee information about that center and to take the mentee there for a tour.

The goals of this condition were (a) to have the peer mentor available to share his or her expertise regarding campus information, study skills, and academic stress management, and (b) to facilitate the student's increase of commitment to the student role by providing a role model.

In the second condition, the mentee group condition, the mentees met one hour per week in groups of two or three with a peer mentor facilitator. Each week the peer mentor presented the same information to the group as was presented by the peer mentors in the pair condition to their individual mentees. The group also addressed the individual concerns of the group members in a discussion format. The goals of the group condition were the same as in the first condition. The difference was the level of contact in that the student in the group condition did not spend personal contact time on an individual basis in the student role with a role model.

The students in the control condition received information sheets once a week which contained the same information given to the mentees by their peer mentors. This was done to control for a possible information confound in the assessment of the effects of social support.

Peer Mentor Training

The peer mentors were registered in a three-credit-hour, sophomore level special topics psychology class which was open only to students who served as peer mentors. To qualify to be a peer mentor, a student must have earned a minimum cumulative GPA of 3.0 at NMSU-A and must have completed a minimum of 12 credit hours at NMSU-A. The class met twice a week during the spring semester and was taught by the investigator.

After the first week during which mentee assignments and an introduction to the project were discussed, Tuesday class sessions usually addressed information to be given to mentees, and Thursday class session usually addressed social psychological theories relevant to the research.

The information provided on Tuesdays focused on the campus and other places where mentees could be referred for personal or academic problems. These sessions included presentations by guest experts from such areas as administration, student services, the library, admissions, academic counseling, vocational counseling, the study skills center, the career center, the computer center, financial aid, the various degree programs, and the local mental health center. During these

sessions, the peer mentors were given limits on their role, so that it was clear to them that they were to refer to the appropriate campus office when questions occurred regarding such things as degree programs or financial aid.

Peer mentors were given some basic information regarding stress management, detecting emotional problems, and suicide prevention. The emphasis was put on the peer mentor making referrals and informing the instructor if such issues arose. Also, peer mentors were trained to take a stance of relative non-advocacy, so they did not cultivate a dependency on the part of the mentee.

The last fifteen to thirty minutes of each Thursday class were reserved for discussion of situations which were of concern to the peer mentors. The class served as a social support group for the peer mentors in order to minimize the negative effects of being the provider of support to the mentees. Careful consideration was given to protect the privacy of the mentees when concerns were discussed.

Instruments

The students completed two sets of questionnaires--one at the onset of the peer mentor program and one at the completion. At the beginning of the semester, students in all conditions completed all questionnaires with two exceptions for those in the control group. The control group did not complete questionnaires measuring attitude or activity preferences. These measures were not needed for the control group because these students were not

matched to peer mentors; the attitude and activity measures were used to assess the similarity within peer mentor/mentee pairs.

At the end of the semester, students in both treatment conditions and in the control group completed questionnaires for the repeated measures--commitment, salience, positive affect negative affect, quality of life, and global social support. Also at the end of the semester, the students in the two experimental conditions completed questionnaires about socially supportive behaviors received from the peer mentors, perception of similarity to the peer mentor, perception of social comparison to the peer mentor, perception of effort invested in the program. The questionnaires which were administered to students at the beginning of the semester were the following:

1. Personal Data Inventory
2. Commitment to Student Role (Stryker & Serpe, 1982)
3. Salience of Student Role (Stryker & Serpe, 1982)
* 4. Attitude Scale (Jamison, Lydon, & Zanna, 1987)
* 5. Activity Preference Scale (Jamison, Lydon, & Zanna, 1987)
6. Interpersonal Support Evaluation List (Cohen & Haberman, 1983)
7. Bradburn Affect Balance (Bradburn, 1969)
8. Quality of Life (Andrews & Whithey, 1976)
9. Academic Motivation Measure

*(questionnaires which were not administered to control group)

The questionnaires which were administered to the students

at the end of the semester were the following:

1. Commitment to Student Role (Stryker & Serpe, 1982)
2. Salience of Student Role (Stryker & Serpe, 1982)
3. Interpersonal Support Evaluation List (Cohen & Haberman, 1983)
4. Bradburn Affect Balance (Bradburn, 1969)
5. Quality of Life (Andrews & Whithey, 1976)

*6. Inventory of Socially Supportive Behaviors (Barrera, Sandler, & Ramsey, 1981)

*7. Mentee's Perception of Similarity to Peer Mentor

*8. Mentee's Perception of Social Comparison to Peer Mentor

*9. Mentee's Perception of Effort Invested in Program

10. Retention Information

*(questionnaires which were not administered to control group)

The peer mentors also completed a set of questionnaires at the beginning of the study and at the end of the study. The questionnaires administered to the peer mentors at the beginning of the study included the following:

1. Personal Data Inventory
2. Attitude Scale (Jamison, Lydon, & Zanna, 1987)
3. Activity Scale (Jamison, Lydon, & Zanna, 1987)
4. Bradburn Affect Balance (Bradburn, 1969)
5. Quality of Life (Andrews & Whithey, 1976)

The questionnaires which were administered to the peer mentors at the end of the study were the following:

1. Bradburn Affect Balance (Bradburn, 1969)

2. Quality of Life (Andrews & Whithey, 1976)

3. Peer Mentors Perception of Social Comparison to Other Peer Mentors

4. Effort Justification Measure

At the end of the study, data were obtained concerning students in all three conditions from the NMSU-A Registrar. Those data were the spring 1990 GPA for each participant and confirmation of summer and fall 1990 registration/nonregistration for each participant.

Predictor Variables

The categorical independent variable was the treatment condition--one control condition and two treatment conditions in which time with a role model was manipulated.

Additional predictor variables were sex, age, ethnicity, marital status, high school GPA, prior college GPA, length of time out of school, hours studied per week when last in school, hours worked per week, and credit hours for which enrolled, global social support, and effort justification. Independent measures were collected from students and peer mentors at the beginning of the peer mentor program. The role of these variables was tested by employing them as covariates in the analysis of the experimental design.

Predictor variables which were measured only for the treatment groups and peer mentors were attitude and activity preference. These variables assessed similarity of peer mentor to mentee.

Dependent Variables

The eleven dependent variables which related to the mentee included the four primary criterion variables--mentee's change in commitment to student identity, mentee's change in salience of student identity, mentee's GPA, and mentee's retention. The remaining seven dependent variables addressed change in psychological well-being and perception of support, similarity and comparison. Those seven variables were mentee's change in positive affect, mentee's change in negative affect, mentee's change in quality of life, mentee's change in global support, mentee's perception of similarity to peer mentor, and mentee's perception of social comparison to peer mentor.

The psychological affect measures--positive affect, negative affect, and quality of life--were included to assess indicators of possible long-term effects of the intervention (Barrera, 1988). Both retention and GPA were concrete immediate outcomes, but affective changes could have influenced later behavior.

The six change scores (commitment, salience, positive affect, negative affect, quality of life, and global support) were calculated as the gain between the Time I and Time II measure of each of those variables. Mentee's GPA, mentee's report of social support behaviors, mentee's social comparison, and mentee's similarity were measured only at the end of the peer mentor program. The final variable--mentee's registration in the following summer or fall--was measured after late registration data had been compiled.

The eight dependent variables examined for the subjects in the control condition were subject's change in commitment to student identity, subject's change in salience of student identity, subject's change in positive affect, subject's change in negative affect, subject's change in quality of life, subject's change in global support, subject's GPA, and subject's retention. The six change scores were calculated in the same manner as those change scores discussed above for the mentees. The GPA and retention scores were obtained in the same manner for the control condition subjects as for the subjects in the experimental conditions.

The five dependent variables which related to the study's secondary focus--effects on the peer mentors as providers of support--were change in positive affect, change in negative affect, change in quality of life, peer mentor's perception of social comparison to other peer mentors, and GPA. The two change scores were derived by measuring both variables at the beginning and at the end of the semester, in the same manner as the change scores were derived from the mentees and for the students in the control conditions. The perception of social comparison was measured at the end of the study. GPA was examined to assess the effect of condition on the peer mentors.

Debriefing

At the beginning of the research, volunteer mentees were given a description of the study with limited detail. They were told that the purpose of the study was to assist them with

adjustment to college life. This information provided only partial disclosure because the students were not told of the similarity, GPA, and retention analyses.

Because there was a 15 week involvement between the peer mentors and the mentees, a formal ending of the relationship was arranged. At the end of the study when students completed the second round of questionnaires, they met for the final time with their peer mentors and formally ended their participation in the study. During that final contact, mentees were asked to sign a form indicating if they wanted to receive a one-page summary of the research after the analysis was completed.

Ethical Consideration

Ethical considerations were taken into account for both the mentees and for the peer mentors. Students who volunteered to be mentees were informed that there would be complete confidentiality regarding the information they provided. They were also given the option of dropping out of the program at any time. When a peer mentor-mentee match was not successful, every attempt was made to reassign the people involved. This occurred in two cases, and the mentees were reassigned. One new pair was successful. The second was not because the mentee expected a tutorial program, and she dropped out of the project due to the time involved and her family obligations.

Neither condition I nor condition II was known to be potentially more successful than the other. Therefore, treatment known to be efficacious was not withheld from any group. There

was reason to believe that each condition, even the control condition which involved monitoring, would be useful in improving performance and retention.

The primary ethical consideration regarding the peer mentors was the possibility of negative effects to the provider of social support. The training classes which met every Tuesday and Thursday during the semester served as a social support group for the peer mentors. In an effort to minimize peer mentor stress, the peer mentors were encouraged to discuss the problems they were having so that solutions could be found before the problems and the stress grew.

For the mentees, the benefit of participating in the research was having a structured linkage beginning in the second week of classes to an experienced, successful student. For the peer mentors, the benefits of being in the program were the intrinsic reward of providing assistance to new students and the extrinsic reward of earning three credit hours for participating in the peer mentor training class.

RESULTS

Analyses conducted included examination of the following: (a) potential covariates, b) the between group differences on the criteria variables, (c) the effects of mentor-mentee similarity and social comparison on the criteria variables for the two experimental conditions, and (d) the effects of being a peer mentor on mentor GPA and change in psychological well-being.

Potential Covariates

Several potential covariates were examined through analysis of variance to determine if participants in the experimental groups and the control group differed from each other before the start of the study. In checking for potential covariates and throughout this research, an alpha level of .05 was used for the determination of significant. Alpha levels between .051 and .10 were considered marginally significant, and alpha levels between .101 and .15 were considered to represent a trend. An examination of the potential covariates by condition indicated that the groups were not significantly different from each other regarding the following: sex, ethnicity (categories collapsed into Anglo and other), perceived global support, length of time since last in school, length of time since last attended NMSU-A, hours studied per week when last in school, hours currently worked per week, high school GPA, college entrance test scores in English and reading proficiency, semester hours for which currently enrolled, education of mother, education of father, and previous college GPA. The *p* values for the nonsignificant potential covariates ranged from .16 to .90.

Further examination of the potential covariates by condition indicated that there were statistically significant overall differences on two variables. These variables were age [$F(2,40) = 9.65$, $p < .004$] and marital status [Chi-square$(1,40) = 6.16$, $p < .005$]. (Marital status was dichotomous, therefore, chi-square rather than ANOVA was used.) Means of the two significant covariates are shown in Table 1. Both of the variables shown in

Table 1 were ordinal. The categories for age ranged form 9 (18 years or less) to 9 (56 years or more). The marital status categories were based on degree of involvement with 0 being high (married or cohabiting) and 1 being low involvement (separated, widowed, divorced, or never married and not cohabiting).

Table 1. MEANS OF SIGNIFICANT COVARIATES BY CONDITION

Condition	N	Age	Marital Status
Individual	14	4.21	.43
Group	12	2.67	.92
Control	15	1.33	.87

Examination of the means in Table 1 indicated that the participants in the individual condition were older than the participants in the group condition, and participants in both conditions were older than the participants in the control group. Regarding marital status, the participants in the individual condition were more likely to be married or cohabiting than participants in the other two groups. Participants in the group condition and the control condition were similar with those in the control group but slightly more likely to be married or cohabiting.

Because there was a high correlation (.49) between age and marital status, a check for confounding was made. When both age and marital status were used as covariates and condition was the dependent variable, the effects of marital status were no longer

significant. It was concluded that marital status overlapped with age; therefore, age alone was used as a covariate in all analyses. In subsequent analyses of dependent variables, age was included with condition as a covariate. Unless otherwise indicated, all means cited below which refer to the participants in the study will be adjusted for age.

Between Group Differences

The between group differences on the four principle criteria variables--GPA, retention, change in identity commitment, and change in identity salience--were analyzed. Additional dependent variables were examined to assess change in psychological well-being. Psychological well-being variables for which change from the beginning to the end of the study was assessed were positive affect, negative affect, and quality of life.

It had been proposed at the beginning of this research that an examination would be made of within group effects of sex and ability. However, participants were not grouped by sex in the final analysis because there was only one male in the individual experimental condition and no males in the group condition, while there were five males in the control group.

Because of the difference in distribution by sex, an internal analysis was made of the control group. There was a difference by sex regarding GPA with the 10 females having a mean GPA of 2.69 and the five males having a GPA of 1.88. Regarding retention, both males and females, had a 60 percent return rate. Therefore, sex was controlled in the analysis of GPA but not in

the analysis of retention.

Grouping was not done by ability because complete information on ability scores was not available as had been planned. While NMSU-A strongly encourages new students to take English, reading, and mathematics placement tests, the institution does not require those tests of students not taking English or mathematics courses. Because NMSU-A has non-degree seeking as well as degree seeking students, many do not take the core English and mathematics course, and, therefore, do not take the placement tests. Scores were available for only 58 percent of the participants.

Because there was a covariate, age, used with the treatment condition, checks were made with each dependent variable for possible interaction. The interaction effects were not significant for any of the dependent variables, so there was not a violation of the homogeneity of regression slopes.

Grade Point Average

A primary focus of this research was to assess the effects of social support on academic performance as measured by grade point average. The participants' GPA's for the semester in which they were part of the peer mentor program were examined. Planned comparisons were employed using the ANOVA program to analyze a priori predictions (Hays, 1988, p. 385; Winer, 1971, p. 582). It was found that the GPA for the combined experimental groups was different in the predicted direction from the GPA for the control group as revealed in a one-tailed, single df comparison [$F(1,40)$

= 1.56, $p < .110$]. This difference indicated that the mentees had a higher GPA than the control group. Age was a significant covariate [$F(1,40) = 4.88$, $p < .03$] in the model, and sex was a marginally significant covariate [$F(1,40) = 2.98$, $p < .09$] (see Table 2). There was no significant difference between the individual and the group conditions regarding GPA.

Table 2 shows means adjusted for age and sex and unadjusted means to point out that the group differences were greater in the predicted direction when age and sex were not controlled. The unadjusted mean for GPA for the individual group ($M = 3.35$) was higher than the adjusted mean ($M = 3.02$), and the unadjusted mean for the control group ($M = 2.42$) was lower than the adjusted mean ($M = 2.44$).

Table 2. ADJUSTED AND UNADJUSTED MEANS FOR PARTICIPANTS' GRADE POINT AVERAGE

Condition	N	Adjusted Spring 1990 GPA*	Unadjusted Spring 1990 GPA*
Individual	14	3.02	3.35
Group	12	2.84	3.08
Control	15	2.44	2.42

* GPA based on 4.0 system

An examination was made of the proposed mediating variables, change in identity commitment and change in identity salience, as covariates in the model to predict GPA. Neither made a significant contribution to GPA. To further explore GPA differences between the mentees and the control, motivation to do well in college and self-reported time studied were examined as

covariates with condition and age, but neither time studied nor motivation to succeed had significant effect on GPA. It appeared that the manipulation caused the higher GPA for the mentees.

Retention was measured by the participant's return to college in the summer or fall after completion of the peer mentor program. It was hypothesized that the mentees would return at a higher rate than would those in the control condition and that the participants in the individual condition would return at a higher rate than those in the group condition. Chi-square analysis was used to assess the dichotomous retention variable (returned to NMSU-A = 1; did not return to NMSU-A = 0). Since age was a covariate, an ANCOVA was also performed; results from the chi-square analysis and the ANCOVA were very similar.

In the chi-square analysis, one-tailed, single df contrasts revealed that there was a marginally significant difference [chi-square (1,40) = 2.34, $p < .06$] between the individual and the group condition, so they were not pooled. ANCOVA results were similar [$F(1,40) = 1.81$, $p < .09$]. This difference was not in the predicted direction; examination of the means revealed that those in the group condition returned at a higher rate, even though they did not earn the highest GPA.

Chi-square analysis and ANCOVA showed that the retention rate for the individual condition was not significantly different from that of the control group. However, a chi-square contrast showed that the group condition was significantly different from the control group [chi-square (1,40) = 2.90, $p < .04$]. ANCOVA

results were quite similar [$F(1,40) = 3.19$, $p < .04$]. The prediction that the mentees would be retained at a higher rate than the control group was not assessed because the mentee groups were significantly different from each other. The prediction that participants in the individual condition would be retained at a higher rate than those in the group condition was not supported. Both adjusted and unadjusted means for retention are shown in Table 3. The unadjusted means show a slightly greater difference than the unadjusted means between the individual and the group conditions. Also, the unadjusted means indicated a slightly smaller difference between the group condition and the control group than did the adjusted means.

Table 3. ADJUSTED AND UNADJUSTED MEANS FOR RETENTION OF PARTICIPANTS

Condition	N	Adjusted Mean Retention	Unadjusted Mean Retention
Individual	14	.66	.64
Group	12	.92	.92
Control	15	.59	.60

Change in Commitment and Salience

It was hypothesized that association by the mentees in the student role with a supportive role model would result in an increase of commitment by the mentees to the student role and an increase of salience of the student role. It was further hypothesized that participants in the individual condition would experience a greater increase in commitment and salience than

would participants in the group condition.

Change in commitment and salience were measured using a 3 x 2 mixed ANCOVA with repeated measures which analyzed commitment and salience at Time 1 and Time 2. These analyses were performed for the total commitment and salience scores and for individual items.

None of the predicted effects held, because there was virtually no change over time in either commitment or salience for any of the groups.

Psychological Well-Being Variables

The psychological well-being variables examined were change in positive affect, change in negative affect, and change in quality of life. Each psychological well-being variable was examined utilizing a repeated measures ANCOVA to assess difference scores based on change from Time 1 to Time 2.

Significant effects were not found for change in negative affect or change in quality of life. There was a marginally significant effect of condition and time on change in positive affect. A one-tailed test revealed that there was a group x time interaction [$F(2,35) = 2.24$, $p < .06$]. The participants in the individual condition had a decline in positive affect from the beginning of the semester to the end; the group condition had a slight increase, and the control group had a slightly larger increase. The significant contrast was a product of the group x time interaction effects and the fact that there were significantly different positive affect scores at Time 2; Time 1

scores were not significantly different by condition (see Table 4).

Table 4. ADJUSTED MEANS FOR POSITIVE AFFECT* FOR PARTICIPANTS BY CONDITION

Condition	N	Positive Affect Time 1	Positive Affect Time 2
Individual	14	4.16	2.56
Group	12	3.83	3.92
Control	15	3.72	4.60

* Possible range of scores for positive affect was 0-5.

Mentor-Mentee Similarity and Social Comparison

Mentor-mentee similarity and social comparison were examined as predictors of GPA, retention, social support behaviors received by mentees, and psychological well-being.

Neither similarity as measured by attitude/activity inventories at Time 1 nor perception of similarity measured at Time 2 were significant contributors to GPA or retention. Likewise, social comparison to peer mentor at Time 2 did not affect performance as measured by GPA and retention.

Social support behaviors received by the mentee from the peer mentor were significantly affected by social comparison to the peer mentor. The effect, however, was in the opposite direction than predicted; those who compared themselves most to their peer mentors reported fewer social support behaviors received.

Neither attitude/activity similarity nor perceived

similarity had a significant effect on social support behaviors received.

Psychological well-being variables--change in positive affect, change in negative affect, and change in quality of life--were unaffected by the similarity and comparison variables with one exception. Perception of similarity at Time 2 had a marginally significant effect on change in negative affect [$F(1,20) = 3.95$, $p < .07$]. There was an increase in negative affect for the individual condition and a decrease in negative affect for the group condition.

Effects of Being a Peer Mentor

The effects on the providers of social support were explored as a secondary focus with no predictions made. Dependent variables examined were GPA and the psychological well-being measures. The independent variables were condition, similarity to mentee, comparison to other peer mentors, and effort put into program.

Before analyses were conducted, peer mentors were examined for differences by condition. Mentors did not differ by condition regarding age, marital status, college GPA, hours currently worked per week, semester hours for which currently registered, salience of the student role, and motivation to succeed in college.

Grade Point Average

There was a significant negative correlation [$r(2) = -.43$, $p < .05$] between the peer mentors' GPA and mentor-mentee attitude

and activity similarity at Time 1. This indicates that the greater the similarity in the mentor-mentee pair, the lower the mentor GPA.

Psychological Well-Being

The psychological well-being variables examined were the same ones which were examined for the participants, and the variables were measured for change over time in the same manner as they were for the participants. ANCOVA's were performed with the covariates being condition and effort and condition and similarity.

There was no significant effect on change in positive or negative affect by condition, effort or similarity.

The condition and the similarity variables did not significantly affect change in quality of life. However, when effort put into the peer mentor program was used as a covariate, there was a significant effect [$F(1,19) = 26.97$, $p < .0001$] on quality of life. Participants in both conditions reported a higher quality of life at Time 2 than at Time 1. An examination of means revealed that mentors in the individual condition reported putting more effort into the program, and they also showed a greater increase in quality of life (see Table 5). Mentors in the group condition reported less effort put into the program, but they also showed an increase in quality of life. (Effort scores ranged from zero to five with zero being high.)

Comparison to Other Peer Mentors

The peer mentor class was designed to function as a social

support group for the mentors. However, perceived comparison of the mentors to other mentors was not significantly correlated with mentor GPA.

Table 5. MEANS FOR PEER MENTOR EFFORT AND CHANGE IN QUALITY OF LIFE CONDITION

Condition	N	Change in Quality of Life	Effort
Individual	14	1.98	2.05
Group	6	.72	2.39

DISCUSSION

In general, the predictions regarding the performance (GPA and retention) of the participants were supported, and the predictions regarding the mediating (identity commitment and identity salience), similarity, and comparison variables were not supported. Exploratory analysis regarding psychological well-being of the participants and the peer mentors suggested mixed consequences regarding positive affect for the mentees and positive consequences for the quality of life of the peer mentor. Further exploratory research revealed a detrimental relationship between mentor-mentee similarity and GPA of the mentor.

Performance

The participants who received preventive social support from a peer mentor attained a higher GPA than those in the control group. The participants in the individual condition did not

differ significantly from the participants in the group condition, but when the conditions were combined, the pooled GPA was higher than the GPA for the control.

Predictions regarding higher GPA for the mentee than for the control group were conditionally supported, and predictions regarding higher GPA for the individual condition than for the group condition were not supported.

Even though these findings were weak in the statistical sense, they did indicate a trend in behavior in the predicted direction. This trend is important because other social psychological studies have shown grades go up after the first year in college (Jesse & Gregory, 1987), and this study has shown that grades start out higher for those who had the intervention.

Retention for those in the individual experimental condition was marginally lower than retention for those in the group condition; therefore, the experimental conditions were not pooled for analysis. Retention for the individual condition was not significantly different from that of the control group. However, retention for the group condition was significantly higher than that of the control group.

Predictions regarding higher retention for mentees than for the control group were not supported, and predictions regarding higher retention for the individual condition than for the group condition were not supported.

Identity Commitment and Identity Salience

There were not significant changes in the identity measures from the beginning of the peer mentor program to the end of the program. It appeared that preventive social support did not produce an increased identification with the supported role. The predictions that commitment to and salience of the student role would increase with time spent in the peer mentor program were not supported.

Psychological Well-Being

There were not significant differences among the groups regarding change in negative affect or change in quality of life. However, there was marginally significant difference among the groups for change in positive affect. The individual condition had a decline in positive affect from Time 1 to Time 2, and the group condition had a slight increase; the control group had a larger increase.

Effects on Peer Mentors

There was a significant negative relationship between attitude/activity similarity and mentor GPA. This suggested that the greater the similarity between the mentor and mentee, the lower the mentor's GPA.

Similarity did not significantly affect psychological well-being of the peer mentors as measured by change in positive affect, change in negative affect, or change in quality of life.

Change in quality of life, however, was significantly

affected by effort put into the peer mentor program. Peer mentors in both conditions reported an increase in quality of life from Time 1 to Time 2. Peer mentors in the individual condition reported putting more time into the program and also reported the greatest increase in quality of life.

Suggestions for Future Research

Suggestions for future research include an examination of (a) the effects of mentee contact with other mentees in the group condition, (b) the effects of reduced contact time, (c) the effects of mentee "reward" through credit for participation, (d) the effect of timing regarding the identity salience measure, (e) the effects of personality factors as mediating variables, and (f) the causes of reduced performance for mentors with similar mentees.

It is possible that the mentees in the group condition were retained at a higher rate because of the social support they received from other mentees in the group. To explore that possibility, it is suggested that the effect of group support be assessed with better refined measures of social support designed to detect sources of perceived domain specific social support from both mentors and mentees.

Because contact time did not have a significant effect on the performance or psychological well-being variables, it is suggested that the program be conducted with less contact time required--perhaps 30 minutes per week that the mentor and mentee be in actual contact. Arranging time schedules was a constant

concern for mentees and a source of many complains. At the very least, it is suggested that contact time be reduced about half way through the semester. It was observed that mentees began to pull away from their peer mentors after Spring Break, and some mentees became annoyed that they had to maintain the same contact time when they no longer needed it.

A possible solution to the resentment of time involved for the mentee would be to have the mentees earn one credit hour for participating in the program and to have the peer mentors earn two credit hours. The mentors and mentees could meet jointly one session a week to hear the campus information presentations, and the peer mentors could meet a second session each week to hear the campus information presentations, and the peer mentors could meet a second session each week for training.

Regarding the decline in identity salience, a possible solution would be to measure salience a couple of weeks before finals week. It is likely that timing was a factor in the reduced score. It is also suggested that a trend analysis be conducted with the identity measures. It is possible that the effects of support are not linear across time.

There continues to be a need to investigate possible mediating variables such as ascribed and personality characteristics (see Barrera, 1988) to elaborate on the preventive model of social support. With larger samples, ascribed traits such as sex and age could be examined for their influences on providing and receiving social support.

Personality characteristics, such as sex-role orientation, may prove to be important mediating variables in the social support-performance process (see Shinn, Lehmann, and Wong, 1984).

The cause of the negative effects of similarity to mentee on peer mentor performance should be examined. Perhaps personality traits are a factor here, also. Mentor activities--both physical and cognitive--could be measured to assess time spent related to helping mentee. Casual observation by the investigator indicated that some mentors became addicted to the mentee dependence and experienced withdrawal as the program ended. After the fact training was presented to deal with this, but it should occur earlier in the training.

CONSLUSIONS

The present study indicated that retention among new college students was improved by providing preventive social support from a peer mentor. It was also found that there was a trend toward higher GPA's for those in the experimental conditions. These findings support the preventive model of social support (Barrera, 1986). Participants in the group condition returned at a higher rate and were not different from participants in the individual condition regarding GPA. This suggested that the more cost effective group approach is also the most effective regarding performance outcomes. Mediating variables such as identity and similarity between mentor and mentee were not found to be significant influences on the performance measures for the mentees.

The finding that similarity was generally not a significant variable provides evidence that it is not necessary to match peer mentors to mentees by activity or attitude preferences. This translates to a time and, therefore, cost savings for the designer and coordinator of a peer mentor program.

Perceived social comparison to the peer mentor was a significant influence on the actual social support behaviors received by the mentee in that the greater the social comparison, the fewer the social support behaviors received. It was possible that mentees with similar peer mentors sought help less often. This finding is supportive of the concept that it is more threatening to seek help from a similar other who has succeeded to the point of being a provider of help than it is to seek help from someone who is dissimilar to one's self. Nadler and Fisher (1984) refer to this phenomenon as "comparison stress."

Similarity had a negative relationship with the GPA measure for the peer mentors. Participating as a mentor resulted in increased quality of life for the mentors with increased effort put into the program. Participation in the program did not affect a significant change in the psychological well-being of the subjects.

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